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EXAMINER	
SERRAO, RANODHI N	
ART UNIT	PAPER NUMBER
2141	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/728,236	PELES, AMIR	
	Examiner	Art Unit	
	RANODHI N. SERRAO	2141	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. This application claims benefit of 60/473,177 filed 23 May 2003.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 4, 17, 18, and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites, "a single link" multiple times in line 4. It is unclear whether the second recitation of "a single link" refers back to the first or not. Claims 4, 17, 18, and 28 recite similar language. Therefore the claims are indefinite.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claim 17 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim recites a computer usable medium which can be interpreted as a carrier signal. When nonfunctional descriptive material is recorded on some computer-readable medium, in a computer or on an electromagnetic

carrier signal, it is not statutory since no requisite functionality is present to satisfy the practical application requirement.

6. The claimed invention as a whole must be useful and accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02. The purpose of this requirement is to limit patent protection to inventions that possess a certain level of "real world" value, as opposed to subject matter that represents nothing more than an idea or concept, or is simply a starting point for future investigation or research (Brenner v. Manson, 383 U.S. 519, 528-36, 148 USPQ 689, 693-96 (1966)); In re Fisher, 421 F.3d 1365, 76 USPQ2d 1225 (Fed. Cir. 2005); In re Ziegler, 992 F.2d 1197, 1200-03, 26 USPQ2d 1600, 1603-06 (Fed. Cir. 1993)).

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Bartlett et al. (2003/0177396). Bartlett et al. teaches a method, implemented in a multi-homing

tunneling device associated with a first site, to collect availability and latency information via polling a remote device at a second site over one or more tunnels (¶ 11), said method comprising the steps of: (a) creating a tunnel between a single link in said first site and a single link in said second site (¶ 40); (b) generating packet-based traffic and polling said remote device with said generated traffic over said created tunnel; and (c) based upon said polling, verifying functionality of said created tunnel, determining at least one of the following: a round trip time associated with transmission of packets or a packet loss ratio between transmitted packets and received packets (¶ 74-78).

9. Claims 4, 5, 7, 11-13, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Halme (2002/0027884).

10. As per claim 4, Halme teaches a method, implemented in a multi-homing tunneling device associated with at least one station in a first site, facilitating tunnel-based packetized communication transmission from a first station in said first site to a second station in a second site via one or more links communicating over one or more networks, said first station having a first station address associated with an internal network of said first site and said second station having a second station address associated with an internal network of said second site, said method comprising the steps of: (a) receiving a packet from said first station, said packet identifying said first station address as a source address and identifying said second station address as a destination address (¶ 43); (b) selecting, for transmission of said packet, a tunnel among a plurality of available tunnels between the first and second site, each of said

tunnels formed between a single link in said first site and a single link in said second site (¶ 44); (c) based on said selected tunnel in (b), identifying a source tunnel address associated with said source address and identifying a destination tunnel address associated with said destination address; (d) modifying said packet by replacing said source address and said destination address of said packet with said source tunnel address and destination tunnel address respectively (¶ 43); and (e) transmitting said modified packet through a link corresponding to said selected tunnel (¶ 60-65).

11. As per claim 5, Halme teaches a method, wherein additional packets between said first and second stations, are transmitted via said selected tunnel used to transmit said first packet (¶ 42).

12. As per claim 7, Halme teaches a method, wherein said source tunnel address and destination tunnel address are at least partially composed from any of the following: an IP address value, a TCP port number, a UDP port number, an IP protocol header field, an Ethernet tag, and a MPLS tag value (¶ 43).

13. As per claim 11, Halme teaches a method, wherein each link is assigned a link preference weight identifying relative priority among available links, said link preference weight used in selection step (b) (¶ 39).

14. As per claim 12, Halme teaches a method, wherein each tunnel between two sites is assigned a tunnel latency weight representing at least one of the following values: a round trip time value or a packet loss ratio value associated with a tunnel compared to a remainder of tunnels, said tunnel latency weight used in selection step (b) (¶ 57).

15. As per claim 13, Halme teaches a method, wherein each tunnel between two sites is assigned a tunnel preference weight identifying relative preference among available tunnels, said tunnel preference weight used in selection step (b) (¶ 59).

16. As per claim 15, Halme teaches a method, wherein said networks is any of the following: local area network (LAN), wide area network (WAN), metropolitan area network (MAN), wireless network, cellular network, or the Internet (¶ 5).

17. Claim 16 is rejected under 35 U.S.C. 102(e) as being anticipated by Dillon (6,839,770). Dillon teaches a method, implemented in a multi-homing tunneling device associated with at least a first station in a first site, facilitating the reception of tunnel-based packetized communications from a second station in a second site via one or more links communicating over one or more networks, said method comprising the steps of: (a) receiving a packet over a link among said one or more links, wherein said packet's destination address is a destination tunnel address of said first site and said packet's source address is a source tunnel address of the second site; (b) identifying an internal network address of said first station corresponding to said destination tunnel address and an internal network address of said second station corresponding to said source tunnel address; (c) modifying said packet by replacing said destination address and said source address of said packet with said identified internal network addresses of said first station and second station respectively; and (d) transmitting the modified packet to said first station (col. 4, line 63-col. 5, line 60).

18. Claim 18 is rejected under 35 U.S.C. 102(e) as being anticipated by Neale et al. (2003/0123481). Neale et al. teaches a multi-homing tunneling device located at a first site facilitating tunnel-based packetized communication transmission between a first station in said first site and a second station in a second site, said communication performed over one or more external networks, said device comprising: a first interface operatively linking said device with at least one station in said first site (¶ 68); a second interface operatively linking said device with said one or more external networks via a plurality of links, said device able to communicate, over said external networks, with at least one station on a second site via a plurality of tunnels, each of said tunnels formed between a single link in said first site and a single link in said second site; memory for storing network information associated with said tunnels and said stations (¶ 203-206); and wherein said multi-homing tunneling device receives packets, via said first interface, for transmission from a station in said first site, identifies available tunnels in said memory for transmitting said received packets, modifies received packets based upon said identified tunnels, and transmits, via said second interface, said modified packets over said external networks to destination stations (¶ 190-198).

19. Claim 28 is rejected under 35 U.S.C. 102(b) as being anticipated by Tuomenoksa et al. (2002/0023210). Tuomenoksa et al. teaches a multi-homing tunneling device located at a first site facilitating tunnel-based packetized communication between at least a first station in said first site and at least a second station in a second site, said communication performed over one or more external networks, said device comprising:

a first interface operatively linking said device with at least one station in said first site (¶ 92); a second interface operatively linking said device with said one or more external networks via one or more links, said device able to communicate, over said external networks, with at least one station on a second site via a plurality of tunnels, each of said tunnels formed between a single link in said first site and a single link in said second site; memory for storing network information associated with said tunnels and said stations (¶ 62); and wherein said multi-homing tunneling device (a) receives a packet via said second interface over said one or more links, wherein said packet's destination address is a destination tunnel address of said first site and said packet's source address is a source tunnel address of said second site (¶ 63); (b) identifies, from said memory, an internal network address of said first station corresponding to said destination tunnel address and an internal network address of said second station corresponding to said source tunnel address (¶ 91), (c) modifies the packet by replacing the destination address and the source address of the packet with the address of the first station and second station respectively, and (d) transmits the modified packet to the first station (¶ 97-100).

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

21. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bartlett et al. as applied to claim 1 above, and further in view of Neale et al.

22. As per claim 2, Bartlett et al. teaches mentioned limitations of claim 1 above but fails to teach a method, wherein transmissions from said multi-homing device to said remote device comprise the steps of: (a) for each packet to be transmitted, identifying a source tunnel address corresponding to a source address of said packet and identifying a destination tunnel address corresponding to a destination address of said packet; (b) modifying said packet by replacing said source address and said destination address of said packet with said source tunnel address and destination tunnel address respectively; and (c) transmitting said modified packet through said created tunnel. However, Neale et al. teaches a method, wherein transmissions from said multi-homing device to said remote device comprise the steps of: (a) for each packet to be transmitted, identifying a source tunnel address corresponding to a source address of said packet and identifying a destination tunnel address corresponding to a destination address of said packet; (b) modifying said packet by replacing said source address and said destination address of said packet with said source tunnel address and destination tunnel address respectively; and (c) transmitting said modified packet through said created tunnel (see Neale et al., ¶ 190-197). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Bartlett et al. to a method, wherein transmissions from said multi-homing device to said remote device comprise the steps of: (a) for each packet to be transmitted, identifying a source tunnel address corresponding to a source address of said packet and identifying a destination tunnel

address corresponding to a destination address of said packet; (b) modifying said packet by replacing said source address and said destination address of said packet with said source tunnel address and destination tunnel address respectively; and (c) transmitting said modified packet through said created tunnel in order to eliminate the conventional TCP 3-way handshake and other associated time-delay procedures and replace them with an improved use of performance enhancing proxies (see Neale et al., abstract).

23. As per claim 3, the above-mentioned motivation of claim 2 applies fully in order to combine Bartlett et al. and Neale et al. Bartlett et al. and Neale et al. teach a method, wherein reception, in said multi-homing device, of packetized data transmitted by said remote device comprises the steps of: (a) receiving a packet over said created tunnel, wherein said packet's destination address is a destination tunnel address of said first site and said packet's source address is a source tunnel address of said second site; (b) identifying an internal network address of an intended recipient first station corresponding to said destination tunnel address and an internal network address of a second station in said second site corresponding to said source tunnel address; (c) modifying said packet by replacing said destination address and said source address of said packet with said identified internal network addresses of said first station and second station respectively; and (d) transmitting the modified packet to said intended recipient (see Neale et al., ¶ 198).

24. Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Halme as applied to claim 4 above, and further in view of Tuomenoksa et al.

25. As per claim 6, Halme teaches mentioned limitations of claim 4 above but fails to teach a method, wherein additional packets between said first and second stations, are transmitted via said plurality of available tunnels. However, Tuomenoksa et al. teaches a method, wherein additional packets between said first and second stations, are transmitted via said plurality of available tunnels (see Tuomenoksa et al., ¶ 79). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Halme to a method, wherein additional packets between said first and second stations, are transmitted via said plurality of available tunnels in order to easily and effectively leverage the power of a shared or a base network, such as the Internet for private connectivity without the complexity, cost, or time associated with setting up traditional virtual private networks (see Tuomenoksa et al., ¶ 17).

26. As per claim 8, the above-mentioned motivation of claim 6 applies fully in order to combine Halme and Tuomenoksa et al. Halme and Tuomenoksa et al. teaches a method, wherein said method additionally comprises the step of monitoring and identifying link failure in links associated with each site, and upon identification of such a failed link, instructing a device associated with said failed link to exclude said failed link and tunnels associated with said failed link in future communication sessions (see Tuomenoksa et al., ¶ 83).

27. Claims 9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Halme as applied to claim 4 above, and further in view of Lubbers et al. (2003/0188035).

28. As per claim 9, Halme teaches mentioned limitations of claim 4 above but fails to teach a method, wherein said links associated with a tunnel are monitored for traffic overload and tunnels with overloaded links are avoided in selection step (b). However, Lubbers et al. teaches a method, wherein said links associated with a tunnel are monitored for traffic overload and tunnels with overloaded links are avoided in selection step (b) (see Lubbers et al., ¶ 64). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Halme to a method, wherein said links associated with a tunnel are monitored for traffic overload and tunnels with overloaded links are avoided in selection step (b) in order to optimize data replication operations, both in terms of speed and ensuring in-order delivery, between two or more storage controllers in a SAN environment using a data transport protocol (see Lubbers et al., ¶ 31).

29. As per claim 14, the above-mentioned motivation of claim 9 applies fully in order to combine Halme and Lubbers et al. Halme and Lubbers et al. teach a method, wherein said devices exchange information regarding interfaces, thereby allowing each device to maintain a local station table with information regarding interfaces within a local network and a remote station table with information regarding interfaces located on remote networks (see Lubbers et al., ¶ 83).

30. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Halme '884 as applied to claim 4 above, and further in view of Halme (7,099,284). Halme '884 teaches mentioned limitations of claim 4 above but fails to teach a method, wherein each link is assigned a link load weight identifying available bandwidth, said link load weight used in selection step (b). However, Halme '284 teaches a method, wherein each link is assigned a link load weight identifying available bandwidth, said link load weight used in selection step (b) (see Halme '284, col. 3, lines 9-22). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Halme '884 to a method, wherein each link is assigned a link load weight identifying available bandwidth, said link load weight used in selection step (b) in order to realize a measurement method enabling the monitoring of the performance of an IPSec link (see Halme '284, col. 1, lines 61-65).

31. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Neale et al. as applied to claim 18 above, and further in view of Halme (2002/0027884). Neale et al. teaches mentioned limitations of claim 18 above but fails to teach a multi-homing tunneling device, wherein said packets are transmitted via a single tunnel. However, Halme teaches a multi-homing tunneling device, wherein said packets are transmitted via a single tunnel (see Halme, ¶ 42). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Neale et al. to a multi-homing tunneling device, wherein said packets are transmitted via a single tunnel in

order to realize a measurement method enabling the monitoring of the performance of an IPSec link (see Halme, ¶ 7).

32. Claims 17, 20-27, and 29-30 have similar limitations as to claims 1-16, 18-19, and 28 above; therefore, they are being rejected under the same rationale.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. These references are:

- Craddock et al. (2002/0198927) teaches apparatus and method for routing internet protocol frames over a system area network
- Lau (2002/0112074) teaches determination of connection links to configure a virtual private network
- Minami et al. (2004/0062267) teaches gigabit Ethernet adapter supporting the iSCSI and IPSEC protocols
- Pham et al. (2003/0074388) teaches load balanced scalable network gateway processor architecture

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ranodhi Serrao whose telephone number is (571)272-7967. The examiner can normally be reached on 8:00-4:30pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on (571)272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/R. N. S./

Examiner, Art Unit 2141

3/18/2008

/William C. Vaughn, Jr./

Supervisory Patent Examiner, Art Unit 2144